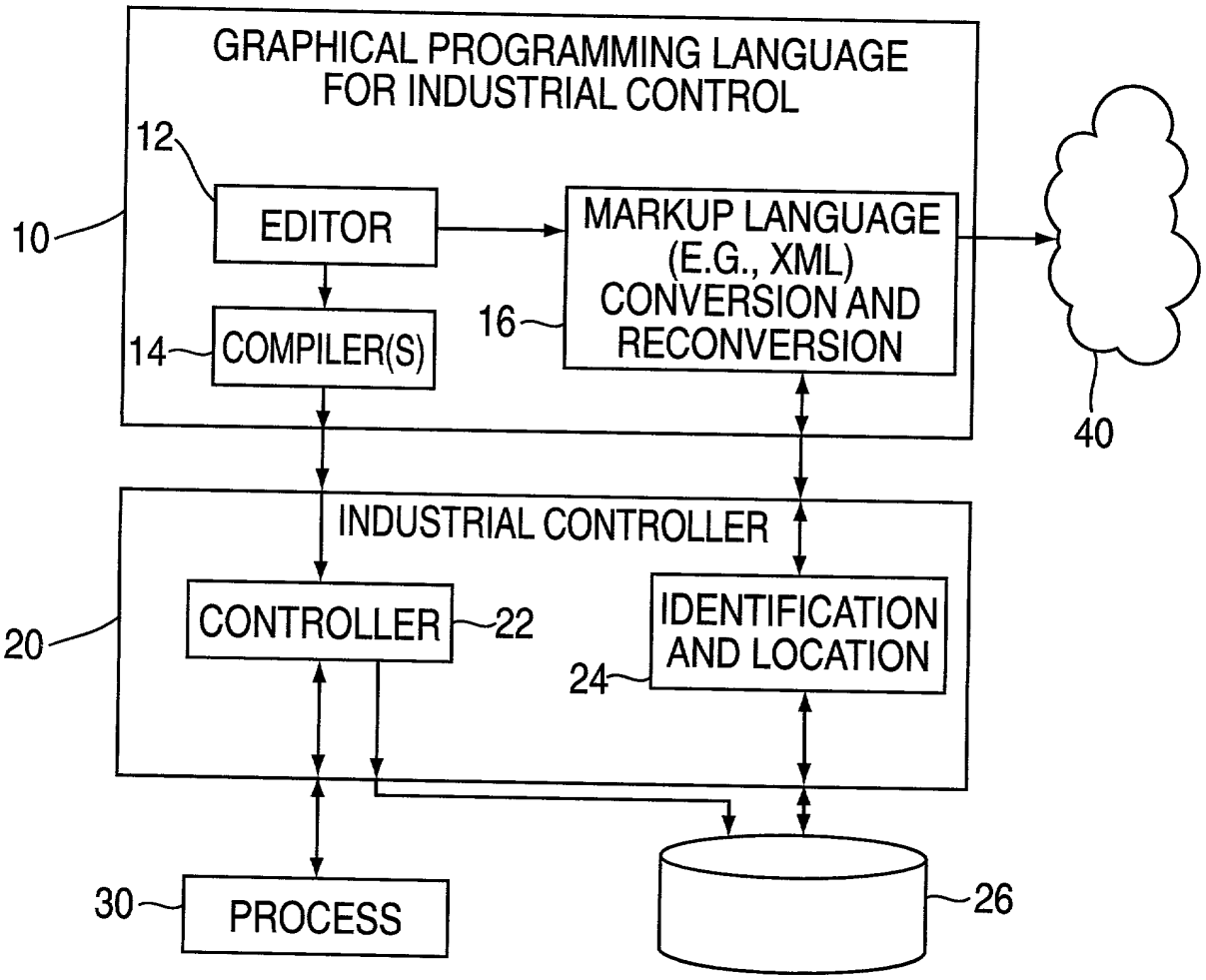
GRAPHICAL PROGRAMMING LANGUAGE
FOR INDUSTRIAL CONTROL
12
10
EDITOR
MARKUP LANGUAGE
(E.G., XML)
CONVERSION AND
RECONVERSION
16
14
COMPILER(S)
40
INDUSTRIAL CONTROLLER
20
CONTROLLER
22
IDENTIFICATION
AND LOCATION
24
30
PROCESS
26

FIG. 1

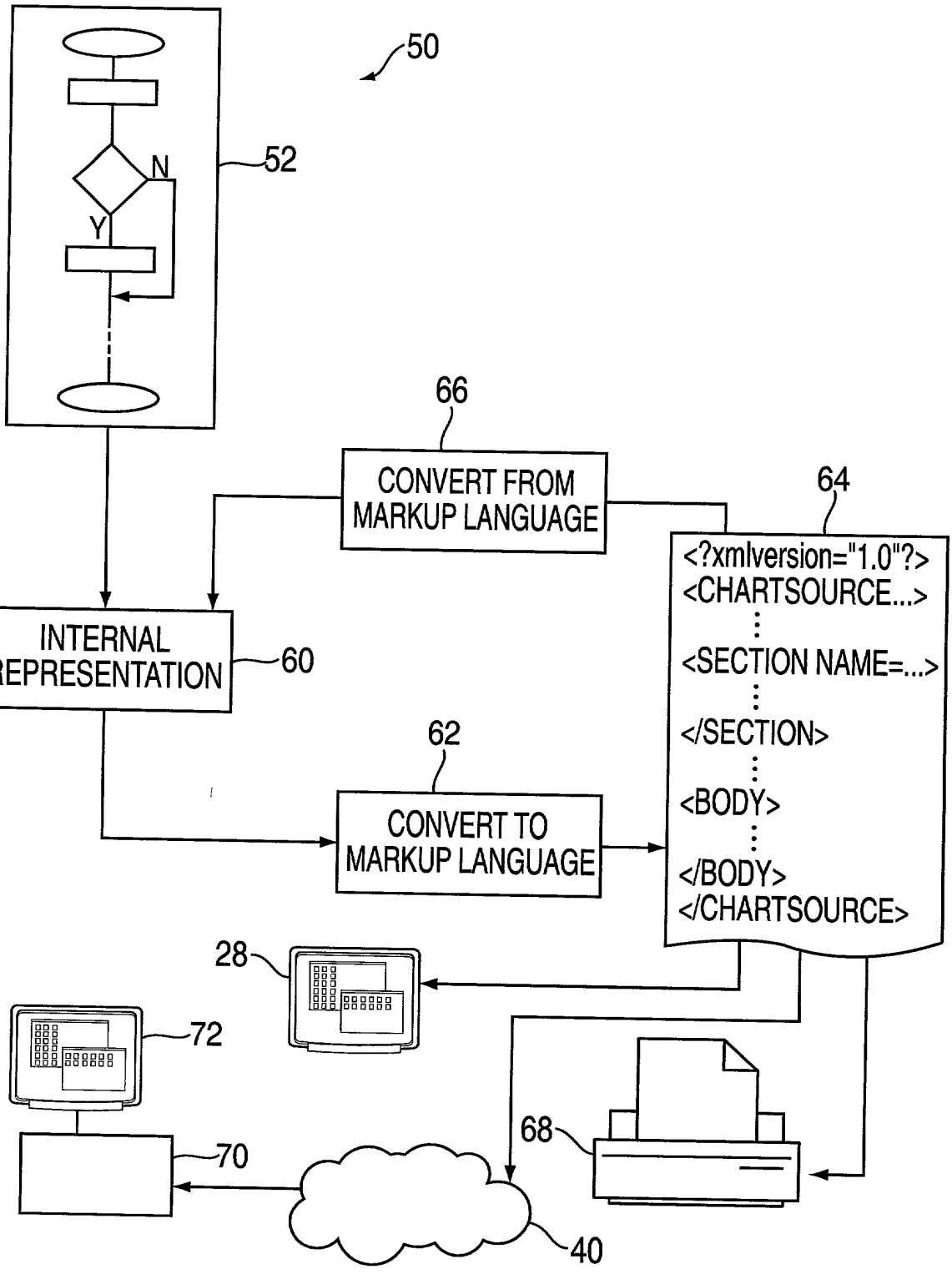
50
52
N
Y
66
CONVERT FROM MARKUP LANGUAGE
64
<?xmlversion="1.0"?>
<CHARTSOURCE...>
<SECTION NAME=...>
</SECTION>
<BODY>
</BODY>
</CHARTSOURCE>
INTERNAL REPRESENTATION
60
62
CONVERT TO MARKUP LANGUAGE
28
72
68
70
40

FIG. 2

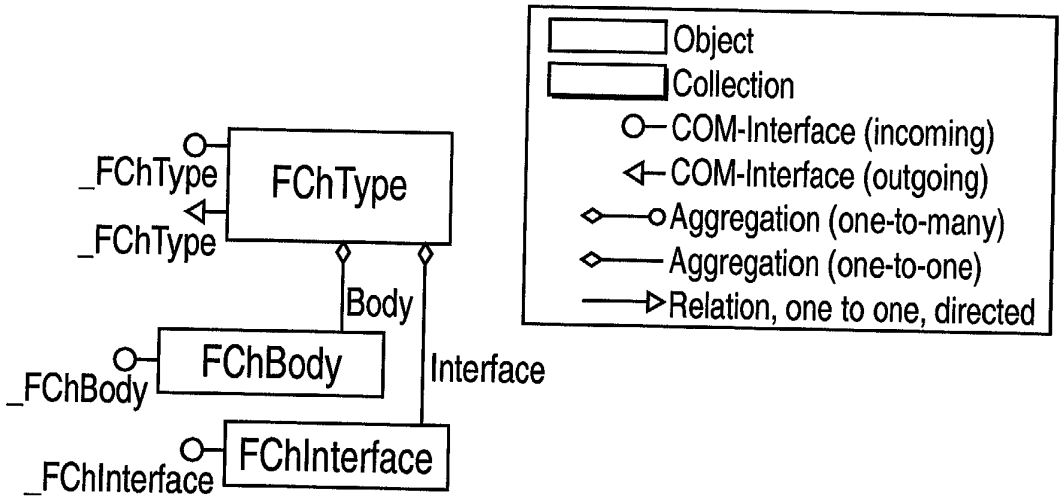
Object
Collection
COM-Interface (incoming)
COM-Interface (outgoing)
Aggregation (one-to-many)
Aggregation (one-to-one)
Relation, one to one, directed
_FChType
_FChType
FChType
Body
Interface
_FChBody
FChBody
_FChInterface
FChInterface

FIG. 3

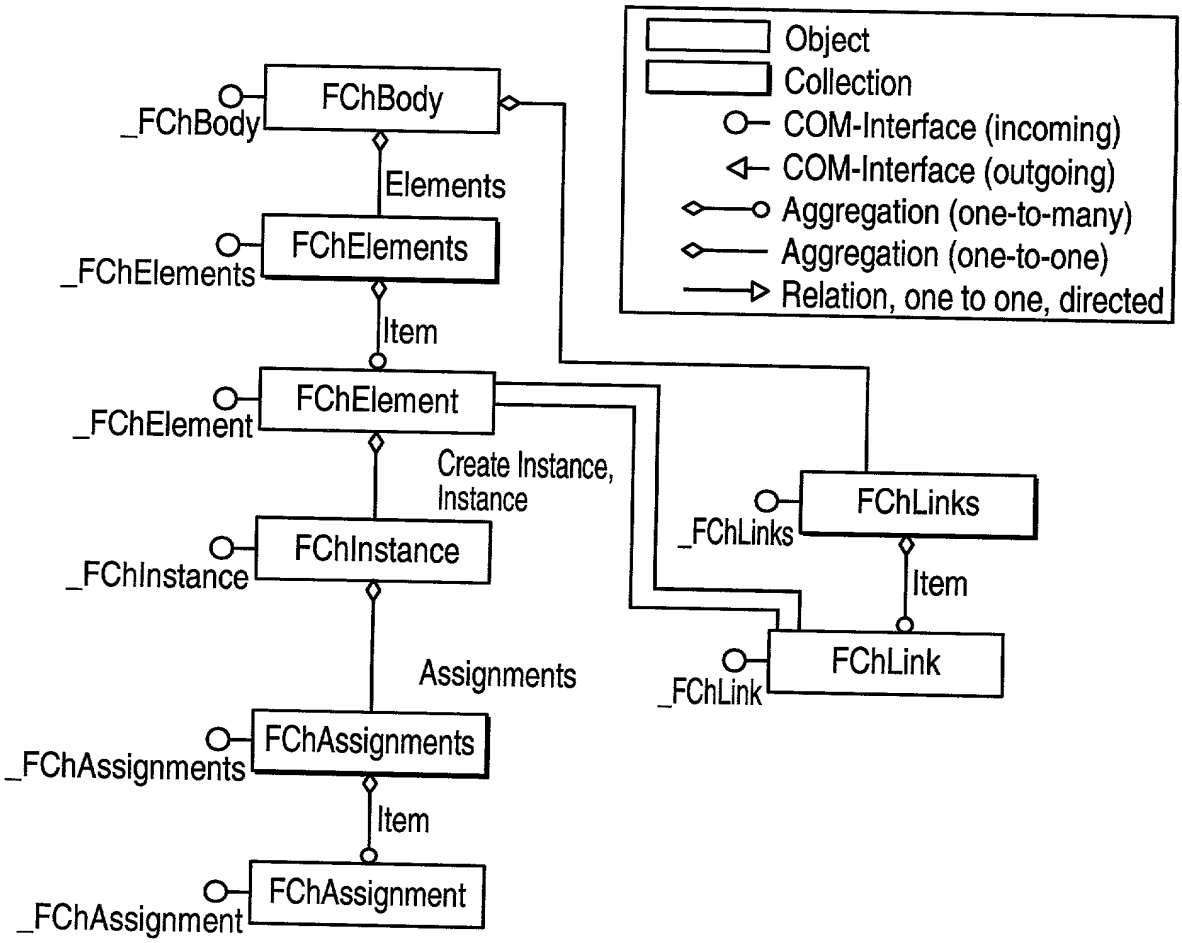
Object
Collection
COM-Interface (incoming)
COM-Interface (outgoing)
Aggregation (one-to-many)
Aggregation (one-to-one)
Relation, one to one, directed
FChBody
_FChBody
Elements
FChElements
_FChElements
Item
FChElement
_FChElement
Create Instance,
Instance
FChInstance
_FChInstance
Assignments
FChAssignments
_FChAssignments
Item
FChAssignment
_FChAssignment
FChLinks
_FChLinks
Item
FChLink
_FChLink

FIG. 4

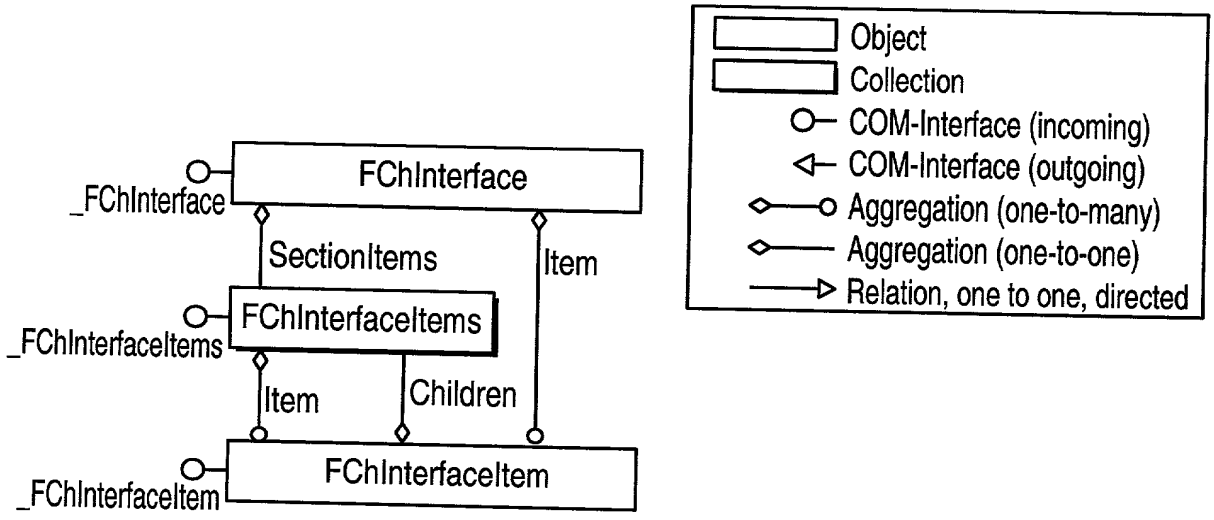
Object
Collection
COM-Interface (incoming)
COM-Interface (outgoing)
Aggregation (one-to-many)
Aggregation (one-to-one)
Relation, one to one, directed
FChInterface
_FChInterface
SectionItems
Item
FChInterfaceItems
_FChInterfaceItems
Item
Children
FChInterfaceItem
_FChInterfaceItem

FIG. 5

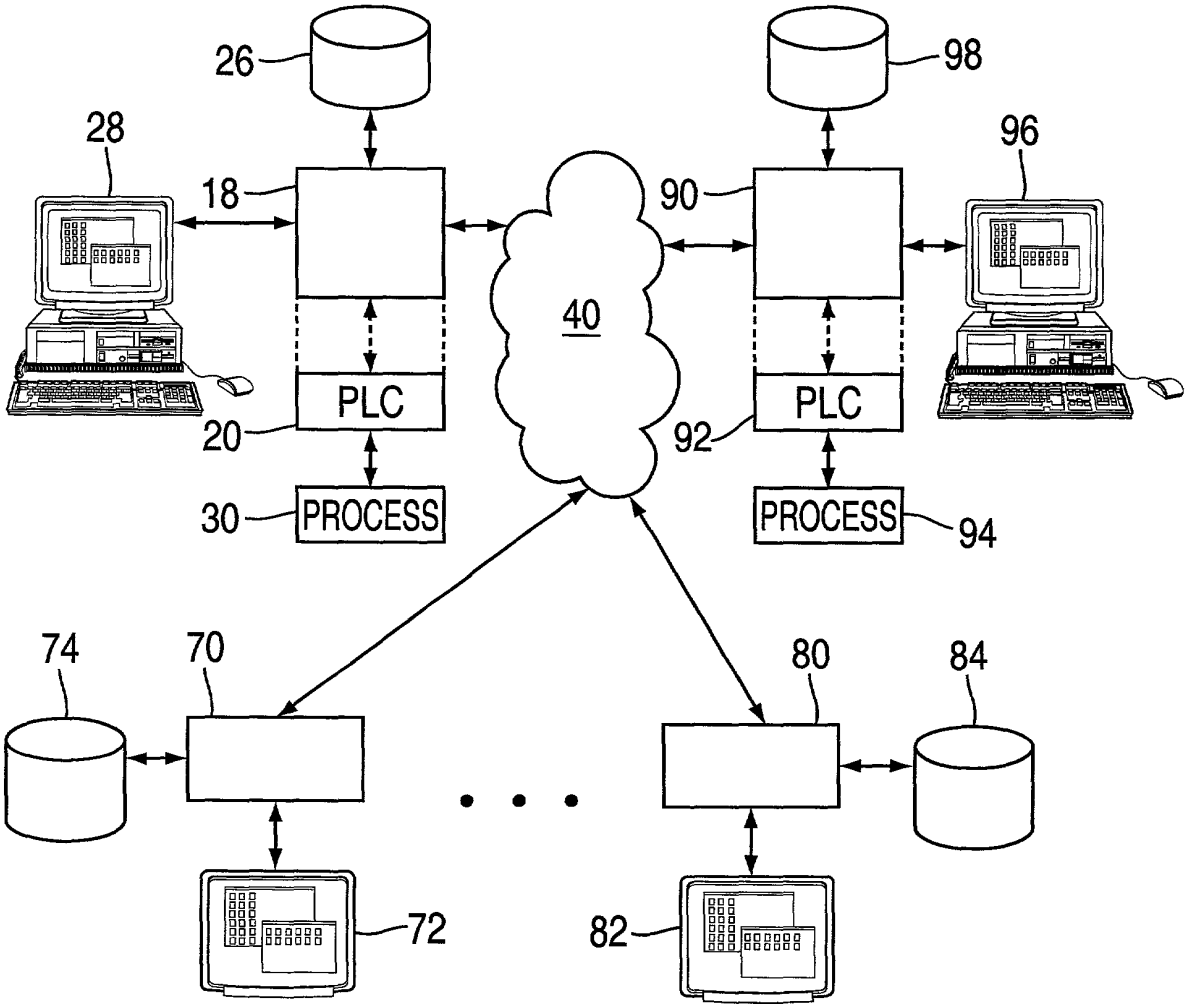
26
98
28
96
18
90
40
PLC
PLC
20
92
30
PROCESS
PROCESS
94
74
70
80
84
72
82

FIG. 6